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**United States Patent** [19]

Enomoto et al.

[11] **Patent Number:** 5,982,407[45] **Date of Patent:** \*Nov. 9, 1999[54] **COLOR PRINTER**[75] **Inventors:** Jun Enomoto; Hiroaki Nakamura,  
both of Kanagawa, Japan[73] **Assignee:** Fuji Photo Film Co., Ltd., Kanagawa,  
Japan[\*] **Notice:** This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).[21] **Appl. No.:** 08/763,721[22] **Filed:** Dec. 11, 1996[30] **Foreign Application Priority Data**

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[51] **Int. Cl.<sup>6</sup>** ..... B41J 2/47[52] **U.S. Cl.** ..... 347/239; 347/252[58] **Field of Search** ..... 347/239, 238,  
347/252, 232[56] **References Cited****U.S. PATENT DOCUMENTS**

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*Primary Examiner*—N. Le*Assistant Examiner*—Lamson D. Nguyen*Attorney, Agent, or Firm*—Sughrue, Mion, Zinn, Macpeak & Seas, PLLC[57] **ABSTRACT**

A color printer is equipped with a digital micromirror device having at least one micromirror array constituted of a number of micromirrors. Each micromirror changes its tilt angle in accordance with a value of mirror drive data of one bit. As the mirror drive data takes a value "1", the micromirror reflects spot light toward color paper, whereas as the mirror drive data takes a value "0", it reflects spot light toward a light absorption plate. During red exposure, red light from a red LED unit is incident upon the digital micromirror device which is then driven by red mirror drive data to expose a red image on the color paper. Next, during radiation of a green LED unit, the digital micromirror device is driven by green mirror drive data to expose a green image on the color paper. Lastly, a blue image is exposed on the color paper by using a blue LED unit. A full-color image is therefore printed on the color paper through three-color line- or frame-sequential exposure.

**20 Claims, 7 Drawing Sheets**